

Appl. No. : 10/074,722
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REMARKS

The specification has been amended as set forth above to rewrite the abstract. This amendment does not narrow the scope of the claims and does not introduce new matter.

Specific changes to the Abstract are shown on a separate set of pages attached hereto and entitled **VERSION WITH MARKINGS TO SHOW CHANGES MADE**, which follows the signature page of this Amendment. On this set of pages, the insertions are underlined while **[deletions are bracketed and bolded]**.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT:

Methods are provided herein for forming electrode layers over high dielectric constant ("high k") materials. In the illustrated embodiments, a high k gate dielectric, such as zirconium oxide, is protected from reduction during a subsequent deposition of silicon-containing gate electrode. In particular, a seed deposition phase includes conditions designed for minimizing hydrogen reduction of the gate dielectric, including low hydrogen content, low temperatures and/or low partial pressures of the silicon source gas. Conditions are preferably changed for higher deposition rates and deposition continues in a bulk phase. Desirably, though, hydrogen diffusion is still minimized by controlling the above-noted parameters. In one embodiment, high k dielectric reduction is minimized through omission of a hydrogen carrier gas. In another embodiment, **[a]** higher order silanes **[, such as disilane and trisilane,]** aid in reducing hydrogen content for a given deposition rate.